

<sup>1</sup>~~68~~. Modified maltitol crystals, being bipyramidal in form comprising two regular tetrahedrons juxtaposed by their square section base with sides of 50 to 500  $\mu\text{m}$  approximately, thus constituting regular octahedrons with edge length of approximately 50 to 500  $\mu\text{m}$ .

<sup>2</sup>~~69~~. A crystalline maltitol composition, comprising essentially maltitol crystals according to claim <sup>1</sup>~~68~~ and having a maltitol content greater than or equal to 87% and a maltotriitol content by weight of dry matter, lower than 1%.

<sup>3</sup>~~70~~. A crystalline maltitol composition according to claim <sup>2</sup>~~69~~ having a maltitol content greater than or equal to 92 %.

<sup>4</sup>~~71~~. A crystalline maltitol composition according to claim <sup>3</sup>~~70~~ having a maltitol content greater than or equal to 96 %.

<sup>5</sup>~~72~~. A manufacturing process of maltitol crystals in accordance with claim <sup>1</sup>~~68~~, comprising the following steps :

- liquefaction of a starch slurry,
- saccharification of the slurry to obtain a maltose hydrolysate containing 87 % by weight of maltose,
- filtration and de-mineralisation of the maltose hydrolysate,
- hydrogenation of the maltose hydrolysate to obtain a maltitol syrup having a maltitol content greater than or equal to 87% and a maltotriitol content lower than 1% by weight of dry matter,
- crystallization of the syrup and separation of the formed maltitol crystals.

<sup>6</sup>~~73~~. A manufacturing process according to claim <sup>5</sup>~~72~~, wherein the maltitol syrup has a maltitol content greater than or equal to 92 %.

74. A manufacturing process according to claim 73, wherein the maltitol syrup has a maltitol content greater than or equal to 96 %.

75. A manufacturing process of a crystalline maltitol composition, comprising essentially maltitol crystals being prismatic in form, ending in plane faces constituting a tetrahedron, and being 100 to 400  $\mu\text{m}$  long and about 20 to 100  $\mu\text{m}$  wide, and having a maltitol content greater than or equal to 87% by weight of dry matter, comprising the following steps :

- liquefaction of a starch slurry,
- saccharification of the slurry to obtain a maltose hydrolysate containing 87 % by weight of maltose,
- filtration and de-mineralisation of the maltose hydrolysate,
- hydrogenation of the maltose hydrolysate to obtain a maltitol syrup having a maltitol content greater than or equal to 87% and a maltotriitol content equal to or greater than 4% by weight of dry matter,
- crystallization of the syrup and separation of the formed maltitol crystals.

76. A manufacturing process according to claim 75, wherein the maltitol syrup has a maltitol content greater than or equal to 92 %.

77. A manufacturing process according to claim 76, wherein the maltitol syrup has a maltitol content greater than or equal to 96 %.

78. A crystalline maltitol composition, comprising maltitol crystals being bipyramidal in form comprising two regular tetrahedrons juxtaposed by their square section base with sides of 50 to 500  $\mu\text{m}$  approximately, thus constituting regular octahedrons with edge length of approximately 50 to 500  $\mu\text{m}$ , and comprising modified maltitol crystals being

prismatic in form, ending in plane faces constituting a tetrahedron, and being 100 to 400  $\mu\text{m}$  long and about 20 to 100  $\mu\text{m}$  wide, and having a maltitol content greater than or equal to 87% by weight of dry matter.

79. A crystalline maltitol composition according to claim 78 having a maltitol content greater than or equal to 92 %.

80. A crystalline maltitol composition according to claim 79 having a maltitol content greater than or equal to 96 %.

81. A manufacturing process of a crystalline maltitol composition in accordance with claim 78, comprising the following steps :

- liquefaction of a starch slurry,
- saccharification of the slurry to obtain a maltose hydrolysate containing 87 % by weight of maltose,
- filtration and de-mineralisation of the maltose hydrolysate,
- hydrogenation of the maltose hydrolysate to obtain a maltitol syrup having a maltitol content greater than or equal to 87% and a maltotriitol content, by weight of dry matter, of between 1 and 4%,
- crystallization of the syrup and separation of the formed maltitol crystals.

82. A manufacturing process according to claim 81, wherein the maltitol syrup has a maltitol content greater than or equal to 92 %.

83. A manufacturing process according to claim 82, wherein the maltitol syrup has a maltitol content greater than or equal to 96 %.

84. In a process of crystallizing maltitol from a starting maltitol syrup having a maltitol content greater than

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or equal to 87%, the improvement consisting in selecting the content of maltotriitol in said starting syrup as being less than 1% to obtain bipyramidal crystals, as being equal to or greater than 4% to obtain prismatic crystals, or as being between 1% and 4% to obtain a mixture of bipyramidal and prismatic crystals.

85. The manufacturing process according to claim 84, wherein the maltitol syrup has a maltitol content greater than or equal to 92 %.

86. The manufacturing process according to claim 85, wherein the maltitol syrup has a maltitol content greater than or equal to 96 %. --

#### REMARKS

The Assignee hereby substitutes without prejudice new claims 68 to 86 for the claims on record, following the discussion between the Examiners and the Representatives of the Assignee during the interview. Said claims are based on the application as filed.

Said claims relate to bipyramidal maltitol crystals and to crystalline maltitol compositions comprising said bipyramidal crystals, to a process for the manufacture of a composition comprising maltitol crystals either bipyramidal or prismatic depending on the maltotriitol content of the maltitol syrup, a process for determining the crystalline form of the maltitol crystals in a composition by controlling the maltotriitol content of the maltitol syrup.

It is stressed that bipyramidal maltitol crystals and prismatic maltitol crystals are very distinct and quite

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